

BUDGET ITEM JUSTIFICATION SHEET P-40						DATE	February 2004		
APPROPRIATION/BUDGET ACTIVITY Other Procurement, Navy/BA-7				P-1 Nomenclature BLI: 8108 X7YH Education Support Equipment (ESE)					
		FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	
QUANTITY		Various	Various	Various	Various	Various	Various	Various	
COST (in millions)		1.878	7.729	5.507	0.426	0.392	0.399	0.407	

**U.S. Naval Academy: (\$1,810 thousand in FY 2003; \$7,140 thousand in FY 2004; \$5,507 thousand in FY 2005)**

The U. S. Naval Academy's mission is to ensure the best-educated and most qualified junior officers enter the naval service. The Academy must maintain the highest standards in academic disciplines and supporting infrastructure. Planned upgrades and replacements are vital in ensuring graduates are technologically prepared to serve in tomorrow's Fleet and Fleet Marine Force while supporting institutional accreditation and competitiveness with peer institutions.

**F. Training Vessels (\$400 thousand in FY 2003, \$5,471 thousand in FY 2004, \$5,061 thousand in FY 2005)**

Provides for replacement of current fleet of 44ft training vessels. These 44ft training vessels are the heart of the Academy's Command Seamanship and Navigation Training Squadron and will have reached the end of their useful life for training in FY02. They are designed and used for open ocean sailing. Since the boats were delivered in 1987 there has been a dramatic 400% increase in usage. The boats pose an increasing threat to midshipmen safety given their age and usage. A Service Life Extension Program was considered, but it is neither technically or economically feasible; 8 vessels will be purchased each year FY03, FY 04 and FY 05 for a total of 24 vessels.

**G. Data Acquisition Sys Diesel Generator (\$150 thousand in FY 2003):**

Provides a data acquisition system for in-depth analysis of diesel engine operating characteristics. The system is especially valuable because of the insight it will provide midshipmen regarding performance of the same engine series used in numerous naval applications. The system will replace an existing system that is obsolete and no longer supported by its manufacturer.

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**H. Particle Image Velocimeter (\$150 thousand in FY 2003):**

Upgrades laboratory measurement capabilities by providing two and three-dimensional depictions of fluid flows in air and water media instead of single-point measurements. This is important for the study of turbulence including trailing vortices behind airplanes, flow in gas turbine engines, and wake studies of ships and submarines.

**I. X-ray Fluorescence Spectrometer (\$110 thousand in FY 2003):**

Enables determination of molecular weight and structures of unknown substances through gas chromatography and mass spectroscopy analysis. Replaces existing device acquired in 1991 which has a vacuum chamber leak which is not repairable. The current equipment also possesses a functionally obsolete mass spectrometer component.

**J. Voice Switch Migration (\$1,000 thousand in FY 2003):**

Replaces existing 5ESS switch to avoid expensive upgrade costs required to maintain currency with industry standards. Failure to either replace or upgrade the existing switch will result in significantly higher annual maintenance costs due to increased difficulty associated with supporting obsolete technology. Switch replacement will also permit recovery of current facility space to be used in support of academic mission priorities.

**K. Gas Turbine Labs (\$450 thousand in FY 2004):**

Provides demonstration capability for split-shaft gas turbine propulsion systems widely used in the Navy and Marine Corps. Supports considerable classroom time dedicated to extensive instruction of all midshipmen in gas turbine theory and operation. Provides an operable lab facility for midshipmen to conduct hands-on experiments and collect data on fleet propulsion systems. This facility will include a fully instrumented helicopter engine, computerized data acquisition, instructor console and small tabletop student labs.

**L. Scientific Visualization Compute Server (\$350 thousand in FY 2004):**

Provides a high-end server for midshipmen and faculty computational requirements in science and technology disciplines. Applications supported include flow visualization, computer-aided design, and computational fluid dynamics. The server also provides central file back-up, software and communications services for numerous laboratories, classrooms and courses. The computer will replace a six-year old device for which incremental upgrades will no longer be feasible due to intervening technological advancements.

**M. E-beam Evaporator (\$270 thousand in FY 2004):**

Provides capability to educate midshipmen in micro-fabrication technology through photolithography and with other techniques. Equipment would be used to demonstrate metal deposition and surface micro-machining techniques underlying semiconductor, nano-system, and microscale heat transfer topics in various engineering courses. Keeps the academic curriculum current by providing an operational capability that allows midshipmen to conduct hands-on experiments in areas increasingly important to national defense.

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**N. Contact Aligner (\$110 thousand in FY 2004):**

Provides capability to educate midshipmen in microfabrication technology using photolithography along with other techniques. Equipment facilitates alignment and ultraviolet exposure of coated wafers for bulk silicon etching through wafer masking to demonstrate semiconductor, nano-system, and microscale heat transfer topics in various engineering courses. Keeps the academic curriculum current by providing an operational capability that allows midshipmen to conduct hands-on experiments in areas increasingly important to national defense.

**O. Intrusion Detection System (\$250 thousand in FY 2004)**

Provides replacement of the existing Intrusion Detection System (IDS) which is outdated and desperately in need of repair. The lines are badly deteriorated to the point where rain will generate false alarms. Most of the lines are beyond repair. The new IDS would also provide the addition of a base-wide public address system and software to control all systems.

**P. Remote Key Access System (\$239 thousand in FY 2004, \$1446 thousand in FY 2005)**

Provides Key-Card Access System to USNA buildings. System will operated from a centrally managed security database which will limit entry to USNA buildings to those midshipmen, faculty and staff who are authorized. System will provide the capability of automatic remote shut-down of entry to vulnerable facilities such as the midshipmen dormitory and other academic and training buildings during increased threat conditions.

**Joint Forces Staff College: (\$68 thousand in FY 2003; \$0 thousand in FY 2004; 0 thousand in FY 2005)**

Funds implement Congressional direction to make Joint Professional Military Education (JPME) available to DOD reservists through a combination of two week Active Duty for Training (ADT) periods at Joint Forces Staff College supplemented with Distance Learning. The information technology mission can be broken into several functional areas: Academic Equipment, Library & Support Staff, and Joint Professional Military Education (JPME) Distance Learning. In FY04 and FY05 JFSC will replace wargaming equipment in Okinawa Hall, the Library Horizon server and selected faculty and staff support equipment.

PROGRAM COST BREAKDOWN					Date:			
P-5					February 2004			
Appropriation/Budget Activity			P-1 Nomenclature					
Other Procurement, Navy/BA-7			BLI: 8108 X7YH Education Support Equipment (ESE)					
TOTAL COST IN THOUSANDS OF DOLLARS								
COST		IDENT	FY 2003		FY 2004		FY 2005	
CODE	ELEMENT OF COST	CODE	QTY	TOTAL COST	QTY	TOTAL COST	QTY	TOTAL COST
	<b><u>U.S. Naval Academy (USNA):</u></b>							
00161	NMR Spectrometer	8108		0.000		0.000		0.000
00161	CNC Robotic Router	8108		0.000		0.000		0.000
00161	Scanning Electron Microscope	8108		0.000		0.000		0.000
00161	Mass Spectrometer	8108		0.000		0.000		0.000
00161	Wire Electric Discharge Machine	8108		0.000		0.000		0.000
00161	Training Vessels	8108	N/A	0.400	8	5.471	7	5.061
00161	Data Acquisition Sys Diesel Generator	8108	1	0.150		0.000		0.000
00161	Particle Image Velocimeter	8108	1	0.150		0.000		0.000
00161	Xray Fluorescence Spectrometer	8108	1	0.110		0.000		0.000
00161	Voice Switch Migration	8108	var	1.000		0.000		0.000
00161	Gas Turbine Labs	8108		0.000	var	0.450		0.000
00161	Scientific Visualization Compute Server	8108		0.000	1	0.350		0.000
00161	E-Beam Evaporator	8108		0.000	1	0.270		0.000
00161	Contact Aligner	8108		0.000	1	0.110		0.000
00161	Intrusion Detection System	8108		0.000	1	0.250		0.000
00161	Remote Key Access System	8108		0.000	var	0.577	var	0.446
00161	Subtotal, USNA ESE OP,N			1.810		7.478		5.507
	<b><u>Joint Forces Staff College (JFSC):</u></b>							
61720	Academic Equipment	8108		0.000	var	0.000	var	0.000
61720	Library & Support Staff	8108		0.000	var	0.000	var	0.000
61720	JPME Distance Learning	8108		0.068	var	0.000	var	0.000
61720	Subtotal, JFSC ESE OP,N			0.068		0.000		0.000
	Total, FSA ESE OP,N			1.878		7.478		5.507

BUDGET PROCUREMENT HISTORY AND PLANNING EXHIBIT (P-5A)						Naval Academy		A. DATE February 2004		
B. APPROPRIATION/BUDGET ACTIVITY OTHER PROCUREMENT, NAVY					C. P-1 ITEM NOMENCLATURE			SUBHEAD	X7YH	
BA7 - PERSONNEL AND COMMAND SUPPORT EQUIPMENT					Education Support Equipment					
Cost Element/ FISCAL YEAR	QUANTITY	UNIT COST (000)	LOCATION OF PCO	RFP ISSUE DATE	CONTRACT METHOD & TYPE	CONTRACTOR AND LOCATION	AWARD DATE	DATE OF FIRST DELIVERY	SPECS AVAILABLE NOW	DATE REVISIONS AVAILABLE
Training Vessels/FY03	8	0.400	NAVSEA, Washington, DC	1-Jan-03	C/FP/OPTION	Unknown	1-Feb-03	1-Aug-03	No	
Data Acquisition Sys Diesel Generator/FY03	1	0.150	Washington, DC	1-Nov-02	C/FP	Unknown	31-Mar-03	30-Jun-03	No	
Particle Image Velocimeter/FY03	1	0.150	Washington, DC	1-Nov-02	C/FP	Unknown	31-Mar-03	30-Jun-03	No	
Xray Fluorescence Spectrometer/FY03	1	0.110	Washington, DC	1-Nov-02	C/FP	Unknown	31-Mar-03	30-Jun-03	No	
Voice Switch Migration/FY03	var	1.000	Washington, DC	1-Nov-02	C/FP	Unknown	31-Mar-03	30-Jun-03	No	
Training Vessels/FY04	8	5.471	NAVSEA, Washington, DC		C/OPTION	Unknown	1-Oct-03	31-May-04	No	
Gas Turbine Labs/FY04	var	0.450	Washington, DC	1-Nov-03	C/FP	Unknown	31-Mar-04	30-Jun-04	No	
Scientific Visualization Compute Server/FY04	1	0.400	Washington, DC	1-Nov-03	C/FP	Unknown	31-Mar-04	30-Jun-04	No	
E-Beam Evaporator/FY04	1	0.270	Washington, DC	1-Nov-03	C/FP	Unknown	31-Mar-04	30-Jun-04	No	
Contact Aligner/FY04	1	0.110	Washington, DC	1-Nov-03	C/FP	Unknown	31-Mar-04	30-Jun-04	No	
Intrusion Detection System/FY04	1	0.250	Washington, DC	1-Nov-03	C/FP	Unknown	31-Mar-04	30-Jun-04	No	
Remote Key Access System/FY04	var	0.239	Washington, DC	1-Nov-03	C/FP	Unknown	31-Mar-04	30-Jun-04	No	
Training Vessels/FY05	7	5.061	NAVSEA, Washington, DC		C/OPTION	Unknown	1-Oct-04	31-May-05	No	
Remote Key Access System/FY05	var	0.446	Washington, DC	1-Nov-04	C/FP	Unknown	31-Mar-04	30-Jun-04	No	

Notes: